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## SCIENTIFIC MANAGEMENT AS A SOLUTION OF THE UNEMPLOYMENT PROBLEM

BY MORRIS LLEWELLYN COOKE,

Director, Department of Public Works, Philadelphia.

Thomas Carlyle in his *Latter Day Problems* has said that "the 'Organization of Labor' is the universal vital Problem of the world." This seems to summarize my interest in scientific management. I believe that through a genuine science of management we are going to get more of what Mr. Carlyle had in mind by "organization" than by any other grouping of industrial mechanisms or by any other system of industrial philosophy.

Management, of course, must be both efficient and scientific. But it must be democratic as well—ultimately every party at interest must have a fair share in its conduct. Just as surely it must be built essentially out of coöperation and not out of strife and loss. And more important than all, the principles upon which it rests must be grounded so deep in eternal justice and the fear of God as to afford a basis for an ever-expanding idealism.

It is not necessary for me to argue that unemployment as a social evil is not only always with us but is always widespread. It has been responsibly estimated that the average annual periods of unemployment are for instance: 25 per cent in the textile industries, as high as 40 per cent in the building trades, 6 to 12 weeks in the shoe industry and 20 to 30 per cent among those engaged in printing and binding.

A telling picture of the concrete results of unemployment in the lives of men and women is given in a letter from Miss Mary Van Kleeck of the Sage Foundation. The story of Rose, the little Italian, who earns her living making artificial flowers, and who had worked so many places she could not even remember the names, makes one eager to help to bring science to the ordering of this haphazard industrial régime. For weeks at a time Rose had no work when she needed it most. This happened again and again—each time apparently for a different reason. Her ups and downs

were without regard to the normal labor demand and in no way occasioned by her own efficiency or inefficiency.

We did not need Rose's testimony that "I am awfully scared they will lay me off. The worry makes my head ache so I cannot sleep nights" to know that the "fear of unemployment" is one of the worst—if not the worst—burdens carried by the working classes, and doubtless a very potent influence towards national inefficiency.

This industrial disturbance which we broadly characterize as unemployment is brought about by almost numberless different causes, important and trivial, known and unknown, operating both at home and abroad, both inside and outside the factory, and both regularly and spasmodically. Any effort to reduce the total amount of unemployment whether in the nation as a whole or in an industry or in the individual factory presupposes an analysis in which the effects of the several operating causes are clearly isolated for individual attack.

"Steady employment" can be made very largely a problem of the individual employer. It is true, of course, that the ebb and flow of immigration, fluctuations in the tariff, general trade booms and depressions, and such world cataclysms as the present war bring about unemployment. But my theory is that the problem of unemployment is a problem of *good* times rather than of *bad* times and that say 90 per cent of all the unemployment which makes men and women suffer and which demoralizes and degrades them can be eliminated by proper organization *within* our factory walls.

A good many manufacturers work on the theory that periods of employment or unemployment are "wished on" us or come largely as "Acts of God." So the stroke of lightning may be taken as an evidence of a Divine dispensation. But this does not prevent us from erecting lightning rods to guide this power back to Mother Earth in such a way that no harm is done. In the same spirit scientific management takes the hopeful view as to these interruptions in employment. We say that unemployment is something that must be reduced to a minimum—yes, removed from our industrial system.

William Ostwald, the great German scientist and philosopher, has pointed out that the change from a pseudo-science to a real science only comes when we begin to use the knowledge we have as to the present and the past to build a future which we then proceed

to make come true. The astronomer bases his predictions as to the future on the race-long accumulation of data. But in doing so he marks out the progress of events in which he has no part except that of the observer. In the science of industry, however, we humans have the power—if we can get that point of view—to write the formula for the future according as we see what will be for the benefit of our kind. God give us the light then to see this future in colors as glorious to the many as the past has been glorious for the few!

The principal bar to any large accomplishment in this field is our inherited fondness for things as they are. Walter Bagehot has said, "There are many persons to whom a new idea gives positive pain." In another place he has pointed out how honestly we have come by our dislike for change. Usage he describes as something which antedates law. In some parts of China even today land tenure without either ownership or leases is the rule. The ruler—call him emperor or president—theoretically at least, owns the land as well as the people. Of what use is a lease to a people that cannot read and that is without law? Usage alone gives the individual Chinaman his opportunity to till a certain piece of soil and thus to eke out his subsistence. In a community like that even the tendency to change becomes anti-social—a crime. If I were a Chinaman so situated and I saw one of my neighbors begin to tie his queue in a novel way, he would become my enemy and the enemy of my people. Could I be assured that if he made a minor change in this matter he might not change his ideas as to more important matters? Once recognize the possibility of change in one individual and it might become contagious. Then the fateful day eventually *might* come when I would be told to get off my land—yes, and in the absence of a lease and of law there would be nothing to do but to get off. And this is only a picture of how society at one time or another everywhere viewed change in the abstract. Bagehot has pointed out how necessary it was in the development of the ideas of nationality and community action for the race to pass through countless ages in which change was *taboo* in order that we might acquire the cohesiveness necessary for progress. So we all come honestly by our antipathy to change. Therefore we can afford to be very charitable to those who have difficulty in adjusting themselves to any new order. Perhaps we may today justly anticipate that progress among us will involve an ever-increasing rate of change.

The crux of that phase of the unemployment problem which I am discussing here is the acceptance on the part of the employer of the responsibility within certain definable limits to keep a *given number of men and women steadily occupied* and at *regular wages*. The outcome will be the same whether the employer strives for this result on account of a more or less altruistic interest in his employees or on account of those money-making considerations which appear to afford ample argument for it or because both of these motives actuate him.

The goal for a given establishment is a definite number of employees each working full time—without overtime—and at maximum wages and with no changes in the personnel. This 100 per cent result is not possible of achievement but is a good standard with which to compare such results as are attained.

Every industrial establishment should theoretically at least give itself a rating as to the number of men and women it employs. This figure will change from time to time and in a successful plant will constantly tend to go up. But neither additions nor subtractions from this number should be made without more thought than is usually given to it. After an industrial establishment has decided to make conscious effort to keep a full staff fully employed, to add to the regular number of employees without adequate reason may just as surely operate against accomplishing this desired result as it will to cut down the staff.

Again, employees must be allowed to earn full time, otherwise there is no special gain through keeping the full complement “employed”—except possibly in the periods of greatest general depression where our efforts are usually reduced to keeping the industrial ship afloat. (It has always been the custom in Philadelphia to lay off for the three winter months most of the day laborers employed by the Bureau of Highways. This year we kept them on even though they could make only three days a week. If we had not done this most of these men would have been compelled to go to the Emergency Relief for aid.)

Frequent changes in personnel—even when the total number of employees remains fairly stationary—is one cause of unemployment and constitutes perhaps the worst malady of American industry. The average employer in this country hires and discharges as many men in a year as he employs. When I first heard this state-

ment made by a national authority on the subject, Mr. E. M. Hopkins in charge of the Employment Bureau of the Curtis Publishing Company, it seemed to be an exaggeration. But taken the country over, the average man has to seek a new job once a year. In some trades the rate of change is even higher. I am informed that in the clothing industry the "hirings and firings" run from 150 to 250 per cent of the total number employed. A wonderful record of improvement in the matter of the labor turmoil is afforded by the experience of the firm of Joseph & Feiss, Cleveland, Ohio, during the last four years:

	<i>Standard Pay roll</i>	<i>New Hands</i>	<i>Per cent</i>
1910.....	1,044	1,570	150
1911.....	951	807	85
1912.....	887	663	75
1913.....	854	569	66
1914.....	825	290	35

Of this I am convinced that any employer will be surprised if he takes the trouble to get definite figures so as to see how many men he actually put on in any one year in comparison with the number he steadily employed.

This very frequency with which the average American changes his employer seems to have suggested the undue importance as mitigating agencies which has been accorded to labor exchanges—municipal, state and federal. We need such exchanges undoubtedly and we want them to be the most effective in the world. But at best they represent only the beginning of the attack on the problem.

Again the statement is frequently made that it is up to the government—federal, state and municipal—to provide work for the unemployed, especially in times of great industrial depression. Only a little figuring as to the amounts of money available for public improvements will convince you that at best government work can only be used to ease off the worst of the distress at the peak of unemployment. And as long as we depend upon the statistics furnished by labor unions and the charity organization societies, we will never know when the peak occurs.

Where the work of an establishment is at all complex, it hardly ever happens that we have for each employee just the right amount of work of the kind he or she is best qualified to perform—there is apt to be either a feast or a famine. Too frequently this condition

is allowed to cause a break in employment. In fact this is probably the principal cause of lost time for those having so-called regular employment. Under scientific management this great cause of economic waste can be cut out—largely through teaching employees how to do more than one thing and at least reasonably well.

Our industrial establishments are constantly hiring people in one department and laying them off in another. In the lower grades this can be much reduced simply by having one employing agency for the entire establishment. In the more skilled operations a planning room and a well-developed system of functional foremanship<sup>1</sup> (the foremen—or some of them acting as coaches or teachers) are required before it is possible to teach people to do new things quickly.

In front of a large clothing house in Philadelphia there is a bulletin board on which the concern is constantly making known its wants as to workmen and workwomen. It recently read:

Ticket girls	Feller Hands
Sewers	Canvas Basters
Girls	Pressers
Edge Basters	

A large hosiery plant in Kensington has the following signs hanging in the doorway ready to insert in the "Help Wanted" sign:

Examiners	Pairers	Girls
Welters	Loopers	Winders
Boarders	Folders	Knitters
Menders	Toppers	Boys

The head of this mill was recently asked whether they ever used an excess of one kind of workers to do temporarily another simpler grade of work and the answer was "No." I am not familiar with either the clothing or hosiery industries but I do not have to know much about them to know that establishments advertising in this way for "help" are not scientifically managed—indeed they are pretty helpless. Obviously all the operations called for on this schedule are so simple as not to require any segregation by trades. Under even a relatively crude type of factory management it should be possible to teach workpeople of average ability in a very few days—if not in a very few hours—to perform any of these operations.

<sup>1</sup> Fully described by Mr. Taylor in *Shop Management* published by Harper Brothers.

To advertise for such detailed industrial ability is really ludicrous judged by the every day assumptions of scientific management.

M. Freminville, a distinguished French metallurgist and manufacturer, has stated that the most remarkable thing he had seen on a recent prolonged visit to this country was the way in which at the Plimpton Press, Norwood, Mass., the management had taught the women workers especially to do two and three different operations in addition to what they considered their several specialities. Mr. A. E. Barter, superintendent of this plant, wrote to me some time ago in regard to this:

Many of our girls know how to operate three different machines and are expert at one or more of the manual operations, such as pasting, gathering, hand-folding, gold laying, etc. That they have this knowledge is due to the fact that scientific management has

*First:*

Demonstrated the advantage both to the firm and employees of training workers to do more than one kind of work.

*Second:*

Made it possible to select employees who can learn to do the different kinds of work efficiently.

*Third:*

Furnished facilities for training the people in the shortest time and with the least effort.

*Fourth:*

Furnished an incentive for the worker. This incentive may be either financial or the opportunity for advancement or both.

With these selected and trained workers, with a normal amount of work, our regular employees will have practically no lost time even during the slack season and their pay should average from 20 per cent to 30 per cent more than under the old system. Workers properly taught soon become bonus earners. Having earned bonus on one kind of work they "get the habit" and when put at other work are not satisfied until they can earn bonus on the new job.

The training of workers to do several kinds of work efficiently, the central control of the work and good routing make it possible.

A To do a certain amount of work with fewer employees.

B Reduce cost.

C Give workers a higher wage.

D Give workers more steady employment.

E What is, perhaps, most important of all, it stimulates and develops the worker.

There can be no question but that without scientific management we could



not have trained the workers to do the different kinds of work and they would not have had as regular employment.

A convenient mechanism which assists in this work is an expense charge symbol which we call "retainers." In case we have a high-priced employee and give him work of a somewhat lower grade than that which he is accustomed to perform, our cost-keeping system permits us to charge the excess up to "retainers," which latter is then spread as a general business expense over the whole product. We use the same accounting device for taking care of the superannuated employees who are no longer able to compete in the matter of output but the question of whose discharge cannot be considered.

In Miss Van Kleeck's book *Women in the Bookbinding Trade* is given a schedule of advertisements which were printed in the *New York World* from July 1, 1908 to June 30, 1909, a period of one year, in which those in charge of these trades in New York City advertised for 1,064 people. Especially interesting is the fact that they advertised for 26 forewomen. During this same year I doubt very much if there was a single advertisement for help placed by any concern operating under anything approximating scientific management and I am quite sure that during the entire history of the movement no one has ever advertised for a foreman or a forewoman. Our methods are so different that those trained in the school of thumb-rule and personal opinion make very poor leaders in an establishment where scientifically determined facts are the guiding stars. Advertising for workpeople is usually—almost invariably—an indication of poor management.

Among the other causes of unemployment which are more or less directly caused by the individual employer (or the effect of which may be almost fully counteracted by the efforts of the individual employer) some of course operate entirely outside the factory such as:

1. *Seasonal demand*

- a. Calendars for instance are usually wanted for delivery in December. It is customary largely to increase the finishing room staff beginning late in the summer. Four girls put on for one month in December require four times as much room as one girl put on September first and four times the teaching. A minimum of planning and routing on this class of work has proven that so much of it can be done during the late spring, summer, and early fall, that very little increase in the force is absolutely necessary.

- b. Again the demand for shoes is very largely a question of

seasons. Printed as an appendix to this paper is a very remarkable memorandum prepared for me by a splendidly managed shoe manufacturing concern doing an annual business of somewhere around \$15,000,000 in which are summarized the results of ten years of study of the unemployment problem. As a result of this work they have more than one plant where the daily output has not varied by more than one per cent over a period of several years.

c. School books are usually required in late August and September. Under scientific management one factory has worked out arrangements with its customers and planned its manufacturing so that nearly all overtime in the so-called "rush season" has been cut out. Formerly a large part of the employees worked until 10 p. m. during the six hottest weeks of the year.

## 2. *Intermittent character of work*

a. The work of stevedores incident to arrival and departure of vessels. In work of this kind a central agency acting for several different companies would tend to lessen the necessary periods of unemployment—perhaps to almost remove them.

b. The mailing of monthly publications is another example of this class of work. Our largest periodical publishing house in Philadelphia has only recently put a stop to laying off its mailers once a month by finding other things for them to do when not actually engaged in mailing.

## 3. *Rise and fall in demand due to changes in style*

a. The narrow skirts of a season or two past threw thousands of women out of work. From the standpoint of scientific management this great change and its effect upon the labor situation should have been foreseen, and something planned by those leading this industrial army whereby the great distress caused by the change could have been avoided.

b. One shoe concern maintains four men on the road all the time,—salesmen who do not sell,—in order to get the earliest possible advice as to changes in style and demand.

## 4. *Inventions of new machines*

a. One of the most enlightened labor leaders and most expert machine type-setters in the country told me that he walked the streets for nearly a year after the invention of the type-setting

machine, peddling groceries and not always making \$10 a week. This was before someone waked up to the fact that having been a good hand type-setter, he could probably be taught to be a good linotype operator.

The following causes operate largely within the industrial establishment itself:

1. *Carrying a larger number of employees on the payroll than are actually needed*

a. In the Kensington textile district of Philadelphia this appears to be the rule. An employer having a mill which running entirely full might require 500 hands will carry say 450 on the payroll but give work actually to 400. This means that on the average 50 are kept reporting for work and are told to come back tomorrow or next week. Since the most valuable hands would quit if they were treated this way, it usually happens that it is the least efficient and lowest paid men who get the unsteady work, thus adding to their demoralization. I am informed that this intermittence of employment is so usual that in this district it has had the effect of making hundreds of men living there really incapable of continuous work. After they have worked "steady" for a week or a month they lay off of their own accord because they can't stand the strain. In other textile mills while they start the same number of men to work in the morning the closing hour is advanced to four o'clock, to three o'clock or even earlier, according to the amount of work on hand. Of course these two arrangements are essentially the same and in the end cause the same amount of unemployment. These practices are followed in good times and bad. The Secretary of our local Lace Weavers' Union (one of the most reliable labor men we have met) reports that part time employment is so permanently the rule among the lace mills, that in his opinion the average lace worker has not made ten weeks on full time in the last five years. This is, of course, in large measure due to the attempt of the employers to hold as large a labor reserve as possible. The conditions which led up to the Lawrence strike were very largely the same except that in that instance it was a whole town where more men and women were housed and held than could possibly be given work under any set of conditions which might reasonably be expected to occur. Our wide-open immigration policy frequently gives rise to the same condition on a national scale.

2. *Frequent changes in standard production, according to volume of orders in sight*

a. A remarkable instance of this is an eastern locomotive building concern which on two occasions within the last ten years has laid off more than 75 per cent of its force almost over night. On January 1, 1908, this concern employed over 19,000 men and six weeks later had less than 8,000 working half-time. No industrial community can absorb such peaks of labor supply, no matter how efficiently it may be organized. I never understood how this could occur until I was recently told that for years this concern has regulated the number of its employees by the total volume of business booked so many weeks ahead. Running a manufacturing plant of the size of this one is too big a job for such simple arithmetical rules. Such methods smack too much of acquiescence in what is handed to you—too little of that type of optimism which as President Wilson says “makes an opportunity out of every lemon.” An army of 19,000 men has a right to demand more resourcefulness on the part of those in command. The time will come when public opinion will force resignations from the inefficient leaders of an industrial army just as it does from those who fail the nation in military enterprises.

3. *Lack of balance between different manufacturing departments*

a. This is altogether a problem in scientific control both of selling and manufacturing.

4. *Lack of stock*

a. Mr. Taylor developed fully twenty years ago what has since become the standardized and fairly uniform practice of dozens of establishments in the matter of purchasing, receipt and storage of materials. Delays due to no stock or the wrong stock have been practically eliminated.

5. *Stock taking*

a. I am constantly hearing of concerns in all parts of the country which stop all operation to take an inventory. Most of our Philadelphia textile mills lose from one to two weeks a year taking stock. One lace mill is now shut down for twelve days taking stock. One cannot help being reminded of Lincoln's story of the steamboat

which had to stop every time it blew its whistle. Stock taking in this sense should be, of course, a thing of the past.

6. *Lay off because employee has earned more through piece rate than regular weekly wage*

a. This is a good example of those insidious and below the surface causes of unemployment, of which there are many. If Molly Brown happens to be rated as a nine dollar a week girl and also happens by Thursday night to have earned \$9.30 through having what are called "fat" jobs, she is frequently laid off by the forelady. Or if the necessities of the work allow a so-called "\$8 a week girl" to earn \$16 in one week, she is very apt to be told to stay home the next week so that for the two weeks she will average her regular wage. This is the means frequently taken by those in charge to maintain respect for inequitable piece rates. I have never known a factory using piece rates where this device in some form is not practiced. The only relief is a scientifically determined wage scale.

Then of course there are many causes of unemployment for which the employee is principally or altogether responsible, such as:

1. *Coming in late*

a. By issuing late slips and making everyone coming in late give a full, even if inadequate reason, this can be gradually cut out. Raising the general efficiency of the individual employee has a beneficial effect.

2. *Illness*

a. High wages and the type of discipline that goes with scientific management invariably improve the health standard. A regularly employed shop nurse can help a great deal in this matter. One shoe concern some years ago figured the total expenses of its shop nurse at 67 cents per employee. Concerns too small to have individual shop nurses can share one, each paying a prorated share of the expense. Thus, in Walpole, Mass., I know of four smaller concerns which hire a nurse in common.

b. A "booze fighter" coming in on Monday and about 9 a. m. determining that the factory is no place for him can usually be put back to work by the nurse after a good dose of aromatic spirits of ammonia. The man gets his wages, his family is spared the dis-

grace of his return and the employer keeps his machines going. Again an employee who coughs too regularly will soon hear from the nurse.

### 3. *Home conditions*

a. A good social worker can keep many men at work by straightening out all sorts of home tangles, which through her experience she is able to handle with precision and efficiency.

### 4. *Incompatibility as between two employees. Sometimes a foreman is concerned*

a. The establishment of an employment bureau in charge of all "hiring and firing" is the only logical solution of these complexities. One disciplinarian for the entire establishment as advocated by Mr. Taylor soon does away with the necessity for much disciplining. Captain Benson, just made the operating head of the U. S. Navy, when he was Commandant of the Philadelphia Navy Yard, insisted that the case of every man who voluntarily left the service of the yard should be investigated. He held that it was almost an insult to have a man willing to voluntarily retire from the service of Uncle Sam. Such leavings were usually the result of friction or misunderstandings.

A good deal of money may be required, if you are going to be able to really make an impression on this problem. You must be ready every once in a while to pay for spoiled goods (I hear some one saying "We have spoiled goods anyhow!") because obviously if you are going to teach people to do new things they are not going to be as adept when they start as they will be a little later on. And if you are going to fine people for spoiled work while you are teaching them you will not be a very popular teacher. Again, you must be ready to put some capital into storing work ahead. This is true for instance in the printing of school books where the principal demand even for standard works covers only a few weeks in the late summer. It is usually cheaper to pay a little interest on outlays for materials and labor and spread out the work and thus steady employment than it is to have everybody working feverishly—and at overtime wages—at the peak of the demand. It takes money as well as effort to hold people worth holding. But if you are going to make a "good thing" of educating people in your plant,

you must hold them after they are educated. It is a pretty expensive game to teach the same thing over and over to different people.

This fact has been so thoroughly accepted by the largest employers in and around Boston, Mass., that for several years past they have been supporting in larger and larger numbers a society which has for its object the study of the problem of unemployment. Recently similar organizations have been started in New York and Philadelphia.

Perhaps our crude methods of determining costs should be referred to as a factor in this unemployment situation. My friend, Mr. Henry L. Gantt, one of the very ablest of the exponents of scientific management, has recently said on this point: "In the past it has been pretty common practice to make the product of a factory at a portion of its capacity bear the whole expense of the factory." Mr. Gantt offers the theory that the amount of expense to be borne by the product should bear the same ratio to the total normal operating expense, as the product in question bears to the normal product, and that the expense of maintaining the idle portion of the plant ready to run is a business expense not chargeable to the product made. As he says: "This latter expense is really a deduction from profits, and shows that we may have a serious loss on account of having too much plant, *as well as* on account of not operating our plant economically." If it was possible to estimate, it would be interesting to know the amount of idleness which might result from a false concept such as that which Mr. Gantt is combating. Again, general trade price schedules in some industries and especially in some localities operate so as to produce rather than diminish unemployment.

We are told that labor unions are opposed to work-people being taught to do more than one thing—or perhaps only that they discourage it. I have gone into this with a number of labor leaders and I am sure that there is nothing in the labor union attitude which is essentially antagonistic to the practice. The ground for this feeling is that the unions—perfectly properly it seems to me—have sought to guard against the use of this scheme by the unscrupulous to lower wages permanently, either for individuals or for groups.

How many industrial plants with which you are acquainted keep any record of the annual earnings of employees? Yet this

is the *one vital question* that is supposed to animate you and me almost more than all others put together. It seems to me that any proper attitude toward the individual employee will almost inevitably lead to the voluntary and at least tentative establishment of a minimum annual compensation for each worker. If this is done a quarterly report as to wages actually earned—a quarterly payroll in which actual earnings for the period are contrasted with a quarter of the projected annual pay—will be a convenient device. The use of such an employees' record card is another illustration of how scientific management does everything in its power to avoid herding employees, or putting them all on the same level; on the contrary we try to individualize them. We *attempt* at least to establish in the factory the relations with which we are happily as a nation so familiar in the home.

One of the most efficient safeguards of proper conditions in a factory is publicity. And there is no place where publicity is needed more than in this matter of the payroll. We can afford in America to pay men and women what they are worth. It is good business to do this. If some one else wants to pay any one of them more than he or she is worth, it does you no harm to facilitate it. Being an economically unsound practice, it does not happen often. So I think it is altogether in the line of progress that some concerns are opening their payrolls freely to those who may have a proper interest in them. The fullest possible understanding in these matters tends toward industrial stability.

A very primitive philosophy of salesmanship seems to be at the bottom of a good deal of unemployment. Of genuine vision as to finding markets and distributing product we have had almost none. Mr. Farrell of the Steel Corporation, Mr. Ford of automobile fame, and the shoe manufacturing concern to which I have before referred suggest the future. The *selling end* for some reason has had too much authority in most concerns as compared to that given to the manufacturing end. If orders so accumulate that normal production in a given period must be increased by half, the selling force expects the manufacturing end to be resourceful enough to cope with the situation. Almost a minimum of effort, however, is made by the salesmen of most establishments to bring in orders so that the peaks of demand for deliveries are evened off and manufacturing thereby assisted. Salesmanship has too fre-



quently meant only selling to unwilling buyers or securing undue margins of profit. No great business of course can be built on such policies.

Attention should also be called to the fact that the separation of the selling and manufacturing ends of a business makes for unemployment. Time after time, Mr. J. H. Willits of the University of Pennsylvania, who is studying this unemployment problem for the City of Philadelphia, has been told by textile men in Philadelphia, "We are not sellers, we are the manufacturers. That's enough for one concern." So long as the manufacturer is content to sit and take whatever orders are handed him and whenever they choose to come, he is disregarding the power he has to regularize production by regularizing demand, or at least planning ahead against known irregularities in demand, so that production at least shall be regular. Moreover, where the manufacturer has placed the selling all in the hands of one agent, that agent selling the goods under his own brand, not the manufacturer's, comes to represent his entire market. The agent, therefore, dominates the manufacturer. Agents in this position "lay down" when hard times appear. As a result the production curves of firms who have deeded away the control of their selling, drop much more quickly when hard times occur, go down farther and come up more slowly.

This lost control of the selling contributes to irregular employment in yet another way. Since the agent sells under his own brand, not the manufacturer's brand, he can, without inconvenience to himself divert the orders that he is giving to Manufacturer A to Manufacturer B. Manufacturer A's whole trade is gone and serious unemployment results before he can readjust himself.

The manufacturer who "farms out" his selling does not have his ear to the ground. He is slow to readjust himself to changes in demand. For example, the hosiery market in the last five years has come to demand less and less heavy cotton goods and more and more thin, imitation silk, or silk goods. The manufacturers who are in touch with the market recognize this as a permanent change in demand and have adapted themselves to it. Many who deal through selling agents are still making thick goods. Unemployment must result from any such miscalculation of the market.

Especially in such periods of business depression as those through which we have just been passing the average salesman

becomes almost a fatalist and really assists to make the situation worse. Perhaps if we had a keener sense of responsibility to keep our people employed in good times as well as bad, we might have keener wits to bring to bear on the problem of finding things for them to do. Surely the growing size of our industrial units and the widening sphere of industrial coöperation suggest a great field for this kind of industrial adventure.

Such experience as I have had suggests definitely that a decided business advantage accrues to those who pay high wages and give continuous employment. To make such policies pay dividends, however, requires men not only leaders with brains and vision but men to whom effort and struggle are inseparable factors of any successful industrial régime.

I cannot leave you however with the impression that scientific management would lose interest in these measures for the doing away with unemployment even if they did not promise larger and more steady profits. In the long run these measures will neither be adopted nor rejected on considerations affecting dividends or wages, but on the one eternal question—are they founded in fair dealing? All the moves on the industrial chess board are not dictated by money considerations. Even the so-called “economic man” is in these days laying on some human qualities. Indeed we are beginning to realize that there are possibilities for romance even in our factories. And both the employers and the employed are more and more going to become interested in this quest as science and mutuality of interest point the way.

## APPENDIX A

### NOTES REGARDING UNEMPLOYMENT IN THE BOOT AND SHOE MANUFACTURING INDUSTRY

#### I. UNEMPLOYMENT

Resulting from:

- A. Seasonal demand for product where employees are laid off and work on short time for a considerable period.

Notes: In the majority of shoe factories, particularly in the large shoe centers, this causes shoe workers to be unemployed for periods ranging from eight to sixteen weeks per annum; in some cases more than this. Many of the employees are laid off entirely but more often are obliged to work on very short time and at greatly reduced wages.

*How Improved:*

1. By education of distributors to a realization that in the long run this lost time has to be paid for in the product and by getting their coöperation with this Company by working on monthly estimates, put in at the beginning of the season. In busy periods customers who order above their previous estimates are cut down on deliveries in favor of customers whose estimates are not overrun. Customers are not held strictly to monthly estimates, but failure to follow them is regarded as a sales problem and is freely discussed.
  2. By the manufacture of special goods, made up without orders and sold through a special department created for that purpose. This department sells goods only when allotted to it and sells them through special distributing channels, giving special values and special terms.
  3. By distributing through both wholesale and large retail trade whose deliveries come at different periods.
- B. Frequent changes in standard daily production policy of factories, according to volume of orders in sight.

Notes: Many factories have no standard daily production basis, but change frequently, taking on or laying off help as needed. Roughly estimated, this causes unemployment of from two to four weeks per annum; in many cases much more.

*How Improved:*

1. By adopting and holding absolutely to a uniform standard daily production basis for each factory. Many of our factories have run for periods of several years, putting into the factory each day a production varying not over one per cent.
2. When orders do not in a monthly period or block equal the factory capacity, by filling in with special stock goods in small quantities, to be distributed through the special department previously mentioned. (See 1-A-Item 3.)
3. When goods needed to fill monthly delivery blocks are necessary, by asking distributors to send in orders on staples to fill shortages.

## II. LOST TIME OF EMPLOYEES THROUGH DAILY AND HOURLY INTERRUPTIONS

*Resulting from:*

- A. Employees coming late; lost time inconsiderable.

*How Improved:*

1. By "In Late Pass System," a proper investigation by foreman, and discipline where needed.
- B. Employee going out or being laid off early, due to lack of work or stock. (Estimates lost time two to five weeks.)

*How Improved:*

1. By organizing material purchasing and supply system, based on pre-determined sheet system, which gives purchasing Departments ample time to purchase all material to exactly meet daily requirements, and to know absolutely when goods must be delivered in the various departments to meet the product in which this material will be needed.
  2. By adopting a pre-determined standard daily production and by holding rigidly to it, foremen are enabled to compute accurately the number of employees needed on each job.
  3. Pre-determination of employees needed on each operation is facilitated by fact that all work is piece work, based on standard average production of operation.
- C. Lost time due to fluctuation on special operations or in special departments, due to variation in the class of product. Estimated lost time one-half week. Estimate ten per cent of employees lost five hours a week, fifty weeks a year, equal one-half week.

*How Improved:*

1. By system of routing work into factories, not only uniformly in pairs per day, but also uniformly in pairs per day in certain types of product, such as Patent Leather Shoes, Bluchers, Tan Calf, Button Boots, etc. Where production on these items varies, whole operations or departments may work under badly fluctuating loads. By routing such types of work into the factory at a uniform rate per day for pre-determined periods these operations are given a steady production, as well as the operations through which the total production passes.

There are many other ways similar to the above by which unemployment problems on special operations or departments can be wholly or partially solved. By keeping constantly in mind the necessity for steady employment it is usually possible to bring about good, or reasonably good conditions.

To secure vacations for employees the entire business is shut down for the Fourth of July week, giving employees an opportunity to get rested just before the hot weather.

June and November are our most difficult months. We formerly closed four days in June and four days in November for stock taking. This was discontinued several years ago. Except for this inventory period there have been only one or two seasons in ten years when factories have been closed, and then only for one- to four-day periods.